

### Amendments to the Claims

Please cancel claim 37. Please amend claim 1 as follows. All pending claims, whether or not amended, are presented below for the Examiner's convenience and will replace all prior versions, and listings, of claims in the application.

Claim 37. (Cancelled).

1. (Currently amended) An apparatus for performing biological reactions comprising:

- a) a substrate comprising a first and a second surface;
- b) an array of biomolecular probes positioned on said first surface; and
- c) a flexible layer affixed to said first surface by an adhesive layer, forming a reaction volume; and
- d) ~~wherein said apparatus comprises~~ at least a first port into said reaction volume; wherein said first port extends through said flexible layer.

36. (Previously added) An apparatus according to claim 1 wherein said biomolecular probes are oligonucleotides.

38. (Previously added) An apparatus according to claim 1 wherein said first port extends from said second surface to said reaction volume.

39. (Previously added) An apparatus according to claim 1 wherein said substrate comprises glass.

40. (Previously added) An apparatus according to claim 1 wherein said substrate comprises a polymer.

41. (Previously added) An apparatus according to claim 1 wherein said substrate comprises ceramic.

42. (Previously added) An apparatus according to claim 1 wherein said substrate comprises silicon.
43. (Previously added) An apparatus according to claim 1 wherein said biomolecular probes are anchored to said first surface using polyacrylamide.
44. (Previously added) An apparatus according to claim 1 wherein said biomolecular probes are anchored to a continuous layer of polyacrylamide.
45. (Previously added) An apparatus according to claim 1 further comprising a heating element positioned under said reaction volume.
46. (Previously added) An apparatus according to claim 45 wherein said heating element is a resistive heater.
47. (Previously added) An apparatus according to claim 1 comprising a plurality of arrays of biomolecular probes, and said flexible layer, said adhesive layer and said first surface comprise a plurality of reaction volumes each containing one of said arrays.
48. (Previously added) An apparatus according to claim 1 wherein said flexible layer comprises plastic.
49. (Previously added) An apparatus according to claim 1 wherein said flexible layer comprises translucent plastic.
50. (Previously added) An apparatus according to claim 1 wherein said flexible layer comprises rubber.

51. (Previously added) An apparatus according to claim 1 wherein said flexible layer comprises polyester.
52. (Previously added) An apparatus according to claim 1 wherein said flexible layer comprises Teflon.
53. (Previously added) An apparatus according to claim 1 wherein said flexible layer comprises polypropylene.
54. (Previously added) An apparatus according to claim 1 wherein said flexible layer comprises polyethylene.
55. (Previously added) An apparatus according to claim 1 wherein said flexible layer comprises polyvinylidene chloride.
56. (Previously added) An apparatus according to claim 1 wherein said flexible layer is a gas permeable membrane.
57. (Previously added) An apparatus according to claim 1 further comprising a scanner.
58. (Previously added) An apparatus according to claim 1 further comprising a sample preparation chip.
59. (Previously added) An apparatus according to claim 58 wherein said first port extends from said second surface to said reaction volume and said sample preparation chip is in contact with said second surface and wherein said sample preparation chip has a port that is aligned with said first port.
60. (Previously added) An apparatus according to claim 1 further comprising a roller, wherein said roller is in contact with said flexible layer.

64. (Previously added) An apparatus according to claim 1 wherein said reaction volume further comprises a water-soluble compound that is a solid at room temperature and a liquid at a second, higher temperature.

**In the Drawings:**

The attached sheet of drawings includes changes to FIG 10. FIG 10 has been corrected to illustrate the scanner element **36** as described on page 23, line 11 of the specification. This sheet, which includes FIG. 10, replaces the original sheet including FIG. 10.

Attachment: Replacement Sheet, including FIG. 10.